

## Abstracts

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## PGI23

**COST EFFECTIVENESS ANALYSIS OF RIFAXIMIN FOR THE TREATMENT OF ACUTE HEPATIC ENCEPHALOPATHY**Rivas R<sup>1</sup>, Cerezo O<sup>2</sup>, Zapata L<sup>1</sup><sup>1</sup>Guaia Mark, Mexico, DF, Mexico, <sup>2</sup>Instituto Nacional de Cancerología, Mexico, DF, Mexico

**OBJECTIVES:** Cirrhosis and its complications, such as hepatic encephalopathy (HE) are the sixth cause of general mortality in Mexico. The objective of this study is to evaluate a cost-effectiveness relationship of medications used to treat hepatic encephalopathy from the perspective of the Mexican Institute of Social Security (IMSS). **METHODS:** Cost-effectiveness analysis of treatments used for acute hepatic encephalopathy, based in a decision tree model, and considering a temporal horizon of 14 days, from the perspective of public health institutions. Existing relevant therapeutic alternatives available at the IMSS are: lactulose, L-ornithine L-aspartate (LOLA), neomycin and rifaximin (the new alternative). Proposed effectiveness measure based on available published studies and based on evidence: Percentage of patients with improvement in signs and symptoms of hepatic encephalopathy. Only direct medical costs are considered for the analysis, obtained from unitary medical attention costs reported by IMSS. A univariate sensitivity analysis, using relevant variables (price and effectiveness) and discount's rates escenarios were performed. **RESULTS:** Treatment costs for each alternative (1 USD = 13.5 MXN \$) totaled: lactulose US\$3294, LOLA US\$3297, neomycin US\$3301 and rifaximin US\$3312. In relation to effectiveness, the percentage of patients who presented improved signs and symptoms for each alternative is as follows: lactulose and LOLA 55%, neomycin 64% and rifaximin 90%. Cost effectiveness ratios are: lactulose US\$5991, LOLA US\$5995, neomycin US\$5157 and rifaximin US\$3680. The incremental cost effectiveness analysis indicates that LOLA and neomycin are surpassed by lactulose and rifaximin, which are located on the efficiency line. Rifaximin can lessen hospital stays by at least one day and cut down at least one medical consultation. If these factors are taken into account for the sensitivity analysis, rifaximin takes the lead as dominating alternative. **CONCLUSIONS:** Rifaximin is a highly cost effective alternative for treating acute hepatic encephalopathy from an institutional perspective in Mexico.

## PGI24

**COST UTILITY ANALYSIS OF CERTOLIZUMAB PEGOL VERSUS NATALIZUMAB MAINTENANCE THERAPY FOR CROHN'S DISEASE**

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**OBJECTIVES:** To determine whether certolizumab pegol was a cost-effective strategy compared with natalizumab for patients with moderate to severe Crohn's disease. **METHODS:** A Markov model was constructed to simulate the progression of adult Crohn's patients. Transitions were estimated from published clinical trials of certolizumab pegol and natalizumab. The costs were discounted at 3% over 5 years. The primary effectiveness measurement was quality-adjusted life years. One-way and probabilistic sensitivity analyses were performed by varying the transition probabilities, costs and health state preferences. **RESULTS:** The treatment with natalizumab yielded 39.295 more quality-adjusted life years compared with the treatment with certolizumab pegol. The incremental cost-effectiveness ratio was \$164,431/quality-adjusted life year at 5 years. Sensitivity analysis demonstrated that the model findings were robust and remained in the 95% confidence interval of \$70,594 - \$393,281. As one of the most influential variables, a reduction in the unit price of natalizumab by 13.8% resulted in an incremental cost-effectiveness ratio below \$80,000 per quality-adjusted life year. **CONCLUSIONS:** The treatment with natalizumab yielded more quality-adjusted life years compared with the treatment with certolizumab pegol in moderate and severe Crohn's patients. However, the cost was considerable.

## PGI25

**PHARMACOECONOMIC ANALYSIS OF THE EFFECTS OF SECONDARY BACTERIAL RESISTANCE IN THE MULTI-DEPARTMENTAL HOSPITAL ON TREATMENT EFFICACY IN COMPLICATED ABDOMINAL INFECTIONS**Kolbin AS<sup>1</sup>, Sidorenko S<sup>2</sup>, Zagorodnikova K<sup>1</sup>, Klimko N<sup>3</sup>, Koroleva O<sup>1</sup><sup>1</sup>Saint - Petersburg State University, Saint Petersburg, Russia, <sup>2</sup>Nhildren Infections Research Institute, Saint Petersburg, Russia, <sup>3</sup>Saint - Petersburg Medical Academy of Postgraduate Education, Saint Petersburg, Russia

**OBJECTIVES:** To evaluate the clinical-economic value of ertapenem therapy in patients with complicated abdominal infections (CAI) vs. standard combination therapy considering the development of bacterial resistance in the Russian settings. **METHODS:** The pharmacoeconomic analysis utilized the cost-effectiveness analysis (CER). If the efficacy and the cost of any of the studied regimens exceeded those of the other regimen, an incremental analysis was carried out (ICERs). The decision analytic model was based on the clinical studies of CAI treatment. Efficacy and safety data were based on additional analyses of a randomised, double blind, multinational trial of ceftriaxone plus metronidazole, ciprofloxacin plus metronidazole, ertapenem. For the assessment of the effects of secondary bacterial resistance on treatment efficacy in CAI we utilized results obtained with a "susceptible - infected - susceptible" model (SIS-model) for development of antimicrobial resistance (i. e. reduction of the susceptibility /effectiveness ratio observed with time), for ceftriaxone / metronidazole, ciprofloxacin / metronidazole, ertapenem. To evaluate the degree of inaccuracy of the results, sensitivity analyses were performed. **RESULTS:** It was established that the mode of starting treatment of CAP combination therapy ciprofloxacin / metronidazole was more expensive (\$3153) in comparison with the use of ertapenem (\$2860) and ceftriaxone/metronidazole (\$2579). The CER established that the mode of starting

treatment of CAP with ertapenem was both more effective and less expensive in comparison with the use of ciprofloxacin / metronidazole. The SIS-model showed that sensitivity to ertapenem bacterial agent is kept significantly longer then to ceftriaxone / metronidazole and ciprofloxacin / metronidazole (up to 60 month).The analysis of the alternative, whose cost of treatment of CAR was equal in all groups, has shown that the strategy using ertapenem was dominating. **CONCLUSIONS:** At CAI, such as a secondary peritonitis when the basic activators are Escherichia coli, Klebsiella pneumoniae and Bacteroides Fragilis it is more expedient to begin treatment with ertapenem.

## PGI26

**CANADIAN COST-UTILITY ANALYSIS OF INITIATION AND MAINTENANCE TREATMENT WITH ANTI-TNF DRUGS FOR REFRACTORY CROHN'S DISEASE**Blackhouse G<sup>1</sup>, Xie F<sup>1</sup>, Assasi N<sup>1</sup>, Gaebel K<sup>2</sup>, Marshall J<sup>3</sup>, Irvine EJ<sup>4</sup>, Robertson D<sup>1</sup>, Goeree R<sup>1</sup>

<sup>1</sup>PATH Research Institute, McMaster University, Hamilton, ON, Canada, <sup>2</sup>St Joseph's Healthcare, Hamilton, ON, Canada, <sup>3</sup>Hamilton Health Sciences, McMaster University, Hamilton, ON, Canada, <sup>4</sup>St. Michael's Hospital, University of Toronto, Toronto, ON, Canada. **OBJECTIVES:** Crohn's disease (CD) is a chronic inflammatory disease of the gastrointestinal tract which can cause abdominal pain, diarrhea and weight loss. Anti-TNF drugs are being used more often and earlier in the disease course of patients with CD who have aggressive disease. However, these medications are quite expensive. The objective of this study is to evaluate the cost-utility of two anti-TNF drugs (infliximab, adalimumab) for refractory CD. **METHODS:** A Markov model was used to estimate the costs and utilities (QALYs) of three treatments (usual care, infliximab, adalimumab) over a 5 year time horizon. After initial treatment, patients can achieve complete remission, treatment response or remain in a drug refractory health state. Patients achieving remission or response remain at risk of relapse during each 3 month model cycle. Patients in the drug refractory health state can either stay in that health state or have surgery during each cycle. Estimated costs and utility values were then assigned to the various model health states. Model input parameters, including initial response rates, relapse rates and utility values were derived from the published literature. **RESULTS:** Usual care had both the lowest expected costs (\$17,017) and QALYs (2.555), while infliximab had both the highest expected costs (\$54,084) and QALYs (2.721). The incremental cost per QALY moving from usual care to adalimumab and from adalimumab to infliximab was estimated to be \$193,305 and \$451,165, respectively. **CONCLUSIONS:** Based on common willingness to pay thresholds, anti-TNF drugs would not be perceived as a cost effective treatment for refractory CD.

## PGI27

**OPEN VERSUS LAPAROSCOPIC PROCEDURES FOR CHOLECYSTECTOMY SURGERY: A COST-UTILITY ANALYSIS, UNDER THE BRAZILIAN PUBLIC PAYER PERSPECTIVE**Nasciben V<sup>1</sup>, Saggia MG<sup>1</sup>, Sanchez JF<sup>2</sup><sup>1</sup>Johnson & Johnson, Sao Paulo-SP, Brazil, <sup>2</sup>Johnson & Johnson, Bogota, Colombia

**OBJECTIVES:** To assess the economic impact of the incorporation of the laparoscopic procedure in terms of costs, QALYs, reduction of the convalescence period and complication rates under the Brazilian public payer perspective. **METHODS:** An analytic decision-tree model was built to estimate costs and outcomes of the cholecystectomy surgery comparing the main differences between open and laparoscopic techniques (minimally invasive procedures), based on Brazilian guidelines for HTA (Vianna, 2007). LAP reduces the probability of nosocomial infection (NI) from 8.93% to 2.6% (Brill 2008), the length-of-stay (LOS) from 3 days to 1 day and return to work in 22.51 days (Keus 2006) when compared to OP. Only direct medical costs (physician fees, hospital length-of-stay (LOS) and materials were based on public lists (SUS/ SIGTAP and SIMPRO, 2009). A panel of specialists was conducted to validate the model. One-month timeframe was considered, based on intra and post-operative periods; consequently a discount rate was not necessary. One-way sensitivity analyses were performed to assess the robustness of the results. **RESULTS:** In terms of outcomes, for each 1000 surgeries the LAP procedure can reduce the number of NI cases in 53, sepsis in 4 and deaths in 2. Total costs (including complications and devices) were higher R\$ 2,271 for LAP than OP (R\$3135 versus R\$864), mainly because of laparoscopic devices' costs (R\$2385). However, LAP technique allowed the reduction on complication costs in 34% (from R\$231 for OP to R\$151 for LAP). Due to lower complication rates, LAP showed a 0.1085 higher QALY than OP (0.8357 for OP vs. 0.9443 for LAP). In the end, the incremental cost-utility ratio for the incorporation of the LAP procedure was R\$20,920 per QALY. **CONCLUSIONS:** Findings suggest LAP approach to cholecystectomy as a safer and cost-effective choice for cholecystectomy surgery, under the Brazilian public system.

## PGI28

**UTILIZATION AND COST OF PEGINTERFERON PLUS RIBAVIRIN COMBINATION THERAPY IN THE MANAGEMENT OF CHRONIC HEPATITIS C VIRUS IN EUROPE**Davis KL<sup>1</sup>, Mitra D<sup>1</sup>, Leteneux C<sup>2</sup>, Bapat B<sup>1</sup>, Naujoks C<sup>2</sup><sup>1</sup>RTI Health Solutions, Research Triangle Park, NC, USA, <sup>2</sup>Novartis Pharma AG, Basel, Switzerland

**OBJECTIVES:** To document real-world utilization patterns and costs of peginterferon plus ribavirin combination therapy in the management of chronic hepatitis C virus (C-HCV) in Europe. **METHODS:** Patient charts from clinics in the UK, France, Germany, Spain, and Italy were retrospectively reviewed by 240 physicians (~48 per